DETAILED ACTION

This Action is in response to Applicant's response filed on 07/13/2011. Claims 1-6 are still pending in the present application. **This action is made FINAL.**

Response to Arguments

Applicants' arguments have been fully considered but they are not persuasive.

The Applicant essentially argues that applied references do not disclose the features of claim 1.

The Examiner respectfully disagrees. Ogino discloses that where the correlation factor is smaller than a predetermined value (n=0.8) as a result of the determination, that is, where the similarity of the two detection signals is low (i.e., where the servo control system is oscillating ***(read as attenuated state during*** *a period of time including a time during which* ***a transmission section performs oscillation)***), a predetermined attenuation factor D (D<1) ***(read as attenuated state)***is sent to the loop gain control portion 20. The loop gain control portion 20 sets the amplification factor in the loop gain control section 20 to a multiple of A (A=P * D), where P is a preset multiplication factor of the reference frequency of the control loop system, on the basis of this attenuation factor D. That is, the loop gain is forceably decreased to attenuate the oscillation of the servo control system. The control data sent from the adder 16 is multiplied by A and is output. (col. 7, lines 10-24)

Furthermore, Ogino discloses that where the correlation factor is greater than a predetermined value, that is, where the similarity of the two detection signals is high (where the servo control system is not oscillating) ***(read as amplified state*** *during any period of time* ***other***

than the period of time), the amplification factor computing portion 14 computes an amplification factor K=S2/S1 ***(read as amplified state)*** of the two values: the peak value S1 output from the peak value detection portion 13 and the peak value S2 output from the peak value detection portion 19. That is, the existing value of the loop gain is computed by determining the ratio of the signal level before one round of the servo loop to the signal level after one round of the servo loop. The amplification factor K, thus determined, is sent to the loop gain control portion 20 which controls the loop gain. (col. 7, lines 25-37)

Furthermore, the Applicant argues that the applied references fail to disclose that "both the amplification and attenuation aspects of the amplifier gain are directly controlled by the gain control voltage."

The Examiner respectfully disagrees. Ogino discloses that the loop gain control portion sets the amplification factor in the loop gain control section to a multiple of A (A=P*D), where P is a preset multiplication factor of the reference frequency of the control loop system, on the basis of this attenuation factor D.

As a result, the argued features are written such that they read upon the cited references; therefore, the previous rejection still applies.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3 and 5-6 rejected under 35 U.S.C. 103(a) as being unpatentable over **Ogino et al. (US 5,583,837; hereinafter Ogino)** in view of **Harris et al. (US 2002/0158689 A1; hereinafter Harris).**

Consider **claim 1**, Ogino discloses a microwave frequency converter comprising:

wherein the control circuit controls the gain control voltage such that the gain of the RF amplifier is in the attenuated state (col. 7, lines 11-23; attenuation factor is sent to the loop gain control portion) during a period of time including a time during which a transmission section performs oscillation (col. 7, lines 13-15; where the control system is oscillating) and times therebefore and thereafter, and to be in the amplified state (col. 7, lines 23-26; amplification factor is sent to the loop gain control portion) during any period of time other than the period of time (col. 7, lines 24-32; where the control system is not oscillating); and

further wherein the amplifier does not perform attenuation when its gain value is associated with an amplified state (col. 7, lines 24-25; the amplification factor computing portion computes an amplification factor).

Ogino fails to specifically disclose an RF amplifier whose gain is adjustable to any value within a range from an amplified state to an attenuated state; and

a control circuit for that applies a gain control voltage to the RF amplifier .

In related art, Harris discloses an RF amplifier whose gain is adjustable to any value within a range from an amplified state to an attenuated state (paragraph 148; adjustable attenuator); and

a control circuit that applies a gain control voltage to the RF amplifier (paragraph 148).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Harris into the teachings of Ogino to provide a novel power amplifier module for amplifying an input signal.

Consider **claim 5**, Ogino discloses a microwave frequency converter comprising:

wherein the control circuit controls the gain control voltage such that the gain of the RF amplifier is in the attenuated state (col. 7, lines 11-23; attenuation factor is sent to the loop gain control portion) during a period of time including a time during which a transmission section performs oscillation (col. 7, lines 13-15; where the control system is oscillating) and times therebefore and thereafter, and to be in the amplified state (col. 7, lines 23-26; amplification factor is sent to the loop gain control portion) during any period of time other than the period of time (col. 7, lines 24-32; where the control system is not oscillating); and

further wherein the amplifier does not perform attenuation when its gain value is associated with an amplified state (col. 7, lines 24-25; the amplification factor computing portion computes an amplification factor).

Ogino fails to specifically disclose an RF amplifier whose gain is adjustable to any value within a range from an amplified state to an attenuated state; and

a control circuit for that applies a gain control voltage to the RF amplifier .

In related art, Harris discloses an RF amplifier whose gain is adjustable to any value within a range from an amplified state to an attenuated state (paragraph 148; adjustable attenuator); and

a control circuit that applies a gain control voltage to the RF amplifier (paragraph 148).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Harris into the teachings of Ogino to provide a novel power amplifier module for amplifying an input signal.

Consider **claim 2**, and **as applied to claim 1 above**, Ogino, as modified by Harris, discloses the claimed invention wherein the control circuit continuously changes the gain control voltage to continuously change the gain of the RF amplifier from a predetermined gain value in the amplified state to a predetermined gain value in the attenuated state, or from a predetermined gain value in the attenuated state to a predetermined gain value in the amplified state. (col. 7, lines 10-37)

Consider **claim 3**, and **as applied to claim 1 above**, Ogino, as modified by Harris, discloses the claimed invention wherein the control circuit instantaneously changes the gain control voltage to instantaneously change the gain of the RF amplifier from a predetermined gain value in the amplified state to a predetermined gain value in the attenuated state, or from a

predetermined gain value in the attenuated state to a predetermined gain value in the amplified state. col. 7, lines 10-37)

Consider **claim 6**, and **as applied to claim 5 above,** Igarashi discloses the claimed invention wherein the RF amplifier is a FET. (paragraph 131; field effect transistors)

Allowable Subject Matter

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Consider **claim 4**, the best prior art of record found during the examination of the present application, **Ogino et al. (US 5,583,837; hereinafter Ogino)** in view of **Harris et al. (US 2002/0158689 A1; hereinafter Harris),** fails to specifically disclose, teach, or suggest the claimed invention wherein the RF amplifier employs a FET device or a HEMT device which is operated by applying a negative voltage to a gate thereof and a positive voltage to a drain thereof, and the control circuit simultaneously switches ON/OFF a gate voltage and a drain voltage to be applied to the gate and the drain of the device to cause the gain of the RF amplifier to be in the attenuated state when the gate voltage and the drain voltage are switched ON, and to be in the amplified state when the gate voltage and the drain voltage are switched OFF.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Bobbak Safaipour whose telephone number is (571) 270-1092. The Examiner can normally be reached on Monday-Friday from 9:00am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Temesghen Ghebretinsae can be reached on (571) 272-3017. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

/Bobbak Safaipour/
Examiner, Art Unit 2618

October 10, 2011

/TEMESGHEN GHEBRETINSAE/

Supervisory Patent Examiner, Art Unit 2618

10/13/11B